

Pseudoachalasia following insertion of a laparoscopic gastric band: a case report

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Background: Laparoscopic adjustable gastric banding (LAGB) is a common procedure to treat obesity. A potential complication of LAGB is pseudoachalasia (an esophageal motility disorder). In select individuals, a LAGB may create high outflow resistance, leading to a high-pressure environment in the distal esophagus, which then leads to progressive weakness and dilatation. Treatment of pseudoachalasia hinges on reversing the underlying cause.

Case Description: A 64-year-old female, with morbid obesity [body mass index (BMI) 41 kg/m²] and a hiatal hernia, underwent laparoscopic insertion of a gastric band. As part of her procedure, a hiatal repair was performed with permanent braided sutures. Post-operatively, the patient lost 30 kg, however began to notice regurgitation and dysphagia. The laparoscopic band was removed a year later, but this did not alleviate her symptoms. Endoscopy showed an abnormal, dilated, fluid-filled esophagus. The patient underwent four endoscopic dilations over the next 24 months, with minimal benefit. On the fourth dilatation, the patient aspirated and developed aspiration pneumonia, resulting in a lengthy admission. Finally, the underlying cause was addressed with a laparoscopic takedown of the anterior hiatal repair and removal of the capsule (from the LAGB). Unfortunately, the patient's symptoms failed to improve over the next 12 months, and a difficult laparoscopic cardiomyotomy was performed. The patient subsequently improved and was then able to tolerate a normal diet.

Conclusions: This case report highlights the critical nature of reversing all potential underlying causes when dealing with pseudoachalasia (i.e., removal of the LAGB and fibrotic capsule; takedown of a prior hiatal repair and/or fundoplication). As well, and of utmost importance, this case report reminds the reader that in a patient with severe symptoms of regurgitation and dysphagia, the airway must be protected during endoscopy to prevent aspiration.

Keywords: Laparoscopic adjustable gastric banding (LAGB); pseudoachalasia; high resolution manometry; cardiomyotomy

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Introduction

In Australia, over 31% of the adult population are obese (1). When patients are morbidly obese and/or have medical complications due to their obesity, bariatric surgery is recommended. Laparoscopic adjustable gastric banding (LAGB) involves surgical constriction of the stomach fundus with a silicone band, resulting in early satiety and consequent weight loss. A potential complication of LAGB is pseudoachalasia.

Pseudoachalasia, or secondary achalasia, is an esophageal motility disorder. Although symptoms (dysphagia and regurgitation), barium studies, and manometry findings are indistinguishable to that of primary achalasia, pathophysiology differs. Achalasia is caused by idiopathic degeneration of the myenteric plexus leading to unopposed tonicity of the lower esophageal sphincter (LES). However, pseudoachalasia may occur as a secondary complication of a malignancy at the gastroesophageal junction (GEJ) or any type of surgical procedure at the hiatus, including LAGB (2,3). This may create high outflow resistance, leading to a high-pressure environment in the distal esophagus, and may result in progressive weakening and dilatation of esophagus (4).

Management of pseudoachalasia hinges on reversing the underlying cause (2,5). We present a case of pseudoachalasia following LAGB insertion and hiatus hernia repair and discuss the important learning outcomes of this difficult problem. We present the following case in accordance with the CARE reporting checklist (available at <https://aoe.amegroups.com/article/view/10.21037/aoe-22-5/rc>).

Case presentation

A 64-year-old female, with morbid obesity [body mass index (BMI) 41 kg/m²] and a hiatus hernia, underwent laparoscopic insertion of a gastric band. Prior to her procedure, she had no symptoms of dysphagia nor regurgitation, and was enjoying a normal diet. As part of her operation, an uncalibrated anterior hiatal repair was performed with permanent braided sutures. Post-operatively, the patient lost 30 kg, however began to notice regurgitation. As a result, the laparoscopic band was removed a year later, but this did not alleviate her symptoms. Endoscopy showed an abnormal, dilated, fluid-filled esophagus, with a moderately tight LES. Manometry and barium swallow showed findings similar to, yet an imperfect mimic of achalasia (*Figures 1,2*). Manometry depicted absence of peristalsis, pan-esophageal pressurization, and incomplete GEJ relaxation on swallowing



Figure 1 Initial barium swallow following removal of laparoscopic band, but without removal of fibrotic capsule or takedown of hiatal repair.

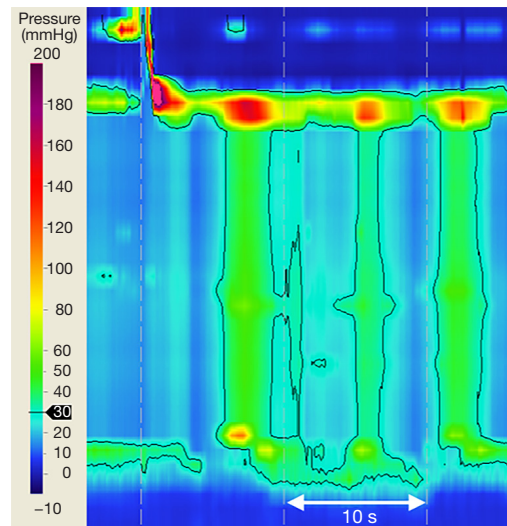


Figure 2 Esophageal high-resolution manometry with pan-esophageal pressurization and incomplete gastroesophageal junction relaxation, consistent with post-surgical pseudoachalasia (10 wet swallows, mean integrated relaxation pressure =23 mmHg, normal <15 mmHg).

with an abnormal integrated relaxation pressure, IRP-4s, consistent with an achalasia-like syndrome (*Figure 1*). A self-reported dysphagia composite score was 37.5 out of 45, where 0 is none and 45 is severe (6).

The patient underwent three endoscopic dilations



Figure 3 Barium swallow following removal of fibrotic capsule, takedown of hiatal repair, and laparoscopic cardiomyotomy (image taken 12 months post-operatively).

with a 30–35 mm Rigiflex™ balloon (Boston Scientific Corporation, Marlborough MA, USA) over the next 24 months. Minimal benefit was observed and symptoms worsened with daily regurgitation leading the patient to a fluid only diet. The treating surgeon decided upon a fourth endoscopic dilatation but, on induction, the patient aspirated and developed aspiration pneumonia. This resulted in a 9-day intensive care unit stay and a 28-day hospital admission. At this point, our team was consulted.

The decision was made to treat the underlying cause, and a laparoscopic takedown of the anterior hiatal repair and removal of the capsule (from the LAGB) were performed. Unfortunately, the patient's symptoms failed to improve over the next 12 months, with ongoing regurgitation and inability to tolerate solids. Therefore, a difficult laparoscopic cardiomyotomy was completed with endoscopic guidance due to substantial fibrosis and scar tissue. The patient subsequently improved and was then able to tolerate a normal diet. Her most recent barium swallow demonstrating a dilated esophagus, although with improved GEJ calibre, is shown (*Figure 3*), and her dysphagia composite score is now 16.5 out of 45 (6).

All procedures performed in this study were in accordance with the ethical standards of the institutional committee and with the Helsinki Declaration (as revised in 2013). Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the editorial office of this journal.

Discussion

When pseudoachalasia occurs secondary to a laparoscopic band, complete resolution of symptoms after release of the LAGB has been noted in literature (4). Our case report however highlights the importance of removing the fibrotic capsule as well as releasing any prior hiatal repair. This patient was initially treated as an idiopathic achalasia patient with repeated balloon dilatations. The appropriate first step in our patient, recognizing that this was pseudoachalasia and not primary achalasia, would have been reversal of all interventions at the hiatus. There are some important lessons in this case, highlighted by the patient's imaging studies.

First, pseudoachalasia is a potential complication of any procedure at the hiatus if there is esophageal outflow obstruction into the stomach (e.g., LAGB, laparoscopic anti-reflux surgery). That said, the most common cause of this rare condition is a tumour at the GEJ, usually adenocarcinoma (2). Second, when pseudoachalasia is suspected, manometry should be the diagnostic modality of choice due to its high sensitivity (88%) compared to barium swallow (77%) and endoscopy (12%) (3). Third, management of pseudoachalasia hinges upon the reversal of the underlying cause (i.e., removal of the LAGB and fibrotic capsule; takedown of a prior hiatal repair and/or fundoplication). Results from a study by Pescarus *et al.* demonstrate that endoscopic division of LAGB-induced fibrosis leads to restoration of esophageal peristalsis in 30% of cases (7). If this intervention fails, a cardiomyotomy is then indicated. Last, and of utmost importance, in a patient with severe symptoms of regurgitation and dysphagia, the airway must be protected during endoscopy, preferably with an endotracheal tube.

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Footnote

Reporting Checklist: The authors have completed the CARE reporting checklist. Available at <https://aoe.amegroups.com/article/view/10.21037/aoe-22-5/rc>

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